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Sandra Adamovich
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August 30, 2004
DATE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Sperry et al. Group Art Unit: 3721

Serial No.: 09/760,189 Examiner: Thanh Truong

Filing Date: January 12, 2001 Docket No.: D-20086-01

Title: **FLUID DISPENSER HAVING IMPROVED CLEANING SOLVENT DELIVERY SYSTEM**

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Commissioner for Patents
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Alexandria, VA 22313-1450

APPEAL BRIEF UNDER 37 CFR § 1.192

Sir:

This Brief is being filed in triplicate pursuant to a Notice of Appeal filed May 17, 2004 in the above-referenced patent application.

Pursuant to 37 CFR §1.17(c), please charge Deposit Account No. 07-1765 in the amount of $330.00 for filing this Brief.

Enclosed is a petition for a two-month extension of time.

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(1) Real Party in Interest

The real party in interest is Sealed Air Corporation (US), assignee of the above-referenced patent application.

(2) Related Appeals and Interferences

There are no other appeals or interferences known to Appellant, the Appellant's legal representative, or assignee which will directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The claims on appeal are pending claims 1, 2, 4-11, and 13-20. A copy of these claims appears in the Appendix. Claims 1 and 10 were once amended and claims 3 and 12 were canceled. All other claims are as originally presented.

(4) Status of Amendments

No amendment was filed subsequent to the final rejection.

(5) Summary of the Invention

The present invention pertains generally to fluid dispensers and related apparatus used to produce on-demand foam-in-place packaging cushions and, more particularly, to an improved system for delivering cleaning solvent to certain portions of such fluid dispensers that are particularly susceptible to occlusion due to build-up and/or hardening of fluid within the dispenser. (Page 1, lines 19-24.)

The invention finds particularly utility in the field of foam-in-place packaging, which is a highly useful technique for on-demand protection of packaged objects. In its most basic form, foam-in-place packaging comprises injecting foamable compositions from a dispenser into a container that holds an object to be cushioned. (Page 1, lines 25-29.)

A common foamable composition is formed by mixing an isocyanate compound with a hydroxyl-containing material, such as a polyol (i.e., a compound that contains multiple hydroxyl groups), typically in the presence of water and a catalyst. The isocyanate and polyol precursors react to form polyurethane. At the same time, the water reacts with the isocyanate compound to produce carbon dioxide. The carbon dioxide causes the polyurethane to expand into a foamed cellular structure, i.e., a polyurethane foam, which serves to protect the packaged object. (Paragraph bridging pages 1-2.)

One difficulty with the foamable compositions used to make polyurethane foam for foam-in-place packaging is that the foam precursors and resultant foam tend to have somewhat adhesive properties. As a result, the foamable composition tends to stick to objects and then harden thereon into foam. This tendency is particularly problematic inside of the dispenser from which the foam precursors are ejected. (Page 2, lines 22-28.) As the dispenser operates over and over again, particularly in automated or successive fashion, foamable

composition tends to build up in the internal mixing chamber and around the discharge port of the dispenser, harden into foam, and block the proper exiting of further foamable composition. As a result, the mixing chamber and discharge port must be frequently cleaned to ensure continued operation of the dispenser. (Page 3, lines 4-10.)

A solvent capable of dissolving both the foam precursors and the foamable composition is typically used to clean the dispensers. (Page 3, lines 21-22.) While previous techniques for supplying solvent to the discharge end of the dispenser have been somewhat effective, none has been able to deliver solvent directly against the internal surfaces of the mixing chamber and discharge port. (Page 4, lines 5-9.) As a result, the effective service life of conventional dispensers has been much shorter than would otherwise be desired. (Page 4, lines 10-12.)

The present invention addresses the foregoing problem by providing, in one aspect, a fluid dispenser, comprising:

a. a housing having an internal chamber, the housing comprising:

(1) an inlet for receiving a fluid product into the housing and being in fluid communication with the internal chamber, and

(2) a discharge port through which fluid product may exit the housing, the discharge port having an interior surface and being in fluid communication with the internal chamber; and

b. a valving rod disposed in the housing and being movable within the internal chamber between an open position, in which fluid product may flow through the internal chamber and exit the housing via the discharge port, and a closed position, in which fluid product is substantially prevented from flowing through the internal chamber, the valving rod comprising:

(1) a central bore,

(2) at least one inlet for receiving a cleaning solvent, the inlet being in fluid communication with the bore, and

(3) one or more outlet ports in fluid communication with the bore, the outlet ports being capable of directing cleaning solvent radially outwards from the bore and against the interior surface of the discharge port when the valving rod is in the closed position, thereby facilitating the removal of at least a portion of any fluid product or derivatives thereof that may be in adherence with the interior surface. (Paragraph bridging pages 4-5; claims 1 and 3 as originally filed.)

By delivering solvent radially outwards from the central bore of the valving rod and against the interior surface of the discharge port, the inventive dispenser provides an improved means for cleaning those areas of the dispenser that are most prone to foam build-up and occlusion. In this manner, the effective service life of the dispenser is greatly extended. (Page 5, lines 14-19.)

In accordance with an alternative embodiment of the invention, the dispenser includes

an internal reservoir in which cleaning solvent may be contained, wherein the reservoir is disposed within the housing and positioned adjacent the internal chamber; and

a conduit providing fluid communication between the internal reservoir and the discharge port to deliver cleaning solvent to the discharge port, wherein the conduit is positioned externally of the internal chamber. (Page 6, lines 7-27.)

(6) Issues

I. Whether claims 1, 2, and 4-9 are anticipated by or obvious over Sperry '848 (U.S. Pat. No. 5,996,848) under 35 USC §102(b) or 35 USC §103(a)?

II. Whether claims 10, 11 and 13-19 are obvious over Sperry '848 (U.S. Pat. No. 5,996,848) in view of Sperry '847 (U.S. Pat. No. 5,255,847) under 35 USC §103(a)?

III. Whether claim 20 is obvious over Sperry '848 (U.S. Pat. No. 5,996,848) in view of Sperry '847 (U.S. Pat. No. 5,255,847) under 35 USC §103(a)?

(7) Grouping of Claims

Under 37 CFR 1.192(c)(7), Appellant states that the claims do not stand or fall together. For the purpose of this appeal, the claims are grouped as follows:

Group 1: claims 1, 2, 4-11, and 13-19

Group 2: claim 20.

(8) Argument of Appellant

I. Claims 1, 2, and 4-9

Claims 1, 2, 4-6, 8 and 9 stand rejected under 35 USC §102(b) as being anticipated by Sperry '848 (U.S. Pat. No. 5,996,848); claim 7 stands rejected under 35 USC §103(a) as being obvious over Sperry '848. For purposes of this Appeal, the patentability of claim 7 will not be separately argued. Instead, the patentability of claims 1, 2, 4-6, 8 and 9 will be addressed under both 35 USC §102(b) and 35 USC §103(a), based on claim 1.

Sperry '848 discloses a fluid dispenser comprising a main body 148 having reception holes 172, 174 and a solvent introduction port 166 (col. 25, lines 30-57). The main body 148 houses "mixing chamber defining member" 218, which contains axial passageway 230 and radial passageways 234, 236, and 256, which communicate with the axial passageway 230 (FIGS. 24-29; col. 27, line 35 through col. 28, line 14; col. 29, lines 7-10). Radial passageway 256 permits solvent flow while passageways 234 and 236 are chemical injection ports. *Id.*

In the Office Actions dated 7/25/03 and 2/13/04, the mixing chamber defining member 218 disclosed in Sperry '848 is analogized to the claimed "valving rod," with passageway 230 being compared with the claimed "central bore," passageway 256 being compared with the claimed "at least one inlet for receiving a cleaning solvent," reception holes 172, 174 being compared with the claimed "inlet for receiving a fluid product," and chemical injection ports 234 and 236 being compared with the claimed "one or more outlet ports." Further, the claimed "housing" is said to read on the disclosed main body 148 while the claimed "discharge port" in the housing is said to read on the disclosed opening 153 in the main body.

According to Sperry '848, mixing chamber defining member 218 moves between

- a non-dispensing position, in which chemical injection ports 234 and 236 are positioned above the corresponding chemical internal passageways 176 and 178, which communicate with respective reception holes 172, 174 (para. bridging cols. 25-26; col. 31, lines 3-27; FIG. 24), and
- a dispensing position, in which chemical injection ports 234 and 236 become aligned with internal passageways 176 and 178 to allow precursor (fluid product) chemicals A and B to flow through the dispenser (col. 33, lines 29-47; FIG. 26).

When in the non-dispensing position, solvent flows through solvent passageway 256 into non-interference fit area 318 between purge rod 270 and wall 320 of passageway 230 in mixing chamber defining member 218 (col. 36, lines 56-62; FIG. 28). From area 318, the solvent flows down along purge rod 270, whereupon it flows outwardly through chemical injection ports 234 and 236, then downwardly out of the opening 153 of the main body or housing 148 and along the tip section 226 of the mixing chamber defining member 218 (col. 37, lines 10-49; FIG. 28).

As shown in FIG. 28 and described at col. 31, lines 25-27, when the mixing chamber defining member 218 is in the non-dispensing position, chemical injection ports 234 and 236 are positioned above the corresponding chemical internal passageways 176 and 178, and are therefore also positioned well above the opening 153 at the discharge end of main body 148. Solvent thus contacts the opening 153 by flowing downwards out of the chemical injection ports 234 and 236 (col. 37, lines 26-45). This is made possible due to the non-interference fit between the

mixing chamber defining member 218 and the main body 148 (col. 37, lines 39-44).

In contrast, the dispenser of the present invention employs a tight fit between the valving rod and internal chamber to reduce the likelihood that fluid product will leak from the internal chamber and also to substantially block solvent from flowing out of the outlet ports when the valving rod is in the open/dispensing position (see, e.g., page 15, lines 16-27 and page 21, line 29 through page 22, line 4). Advantageously, such a construction results in far less solvent usage than the earlier Sperry '848 dispenser, and also produces a rather isolated and specific area for foam build-up. As explained in the specification at the paragraph bridging pages 23-24, the present inventors have

> determined that the most problematic part of dispenser 24 for foam build-up and occlusion is the discharge port 66 and, specifically, the interior surface 59 thereof, which also defines part of the internal mixing chamber 56. Thus, another beneficial feature of the present invention is that valving rod 54 is preferably adapted to direct cleaning solvent 100 against the interior surface 59 of discharge port 66 when the valving rod is in the closed position. As shown most clearly in FIG. 21, this may be accomplished by placing outlet ports 86 at the distal end 116 of valving rod 54 such that the outlet ports 86 are adjacent to the interior surface 59 when the valving rod is in the closed position. This configuration allows the solvent to flow directly against the problematic surface 59 and more effectively prevent foam build-up on such surface, as compared with previous dispensers.

Thus, instead of deluging the valving rod and discharge port with a continuous, downwardly-flowing stream of solvent as taught in Sperry '848, the presently claimed invention strategically directs far smaller quantities of solvent at the precise areas where such solvent is most effectively employed, namely, directly against the interior surface of the

discharge port. This feature of the invention was described in originally-filed claims 3 and 12, and was incorporated into independent claims 1 and 10 in the amendment mailed 6/13/2003.

Accordingly, claims 1 and 10 as presented in this appeal specify that the outlet ports of the valving rod direct cleaning solvent "radially outwards ... and against said interior surface of said discharge port when said valving rod is in said closed position...." In this manner, "at least a portion of any fluid product or derivatives thereof that may be in adherence with said interior surface of said discharge port," i.e., from the previous dispensing cycle, is removed when the valving rod is in the closed/non-dispensing position so that the dispenser is ready for the next dispensing cycle. Such a feature as neither taught nor suggested in Sperry '848.

Response to Examiner's Arguments

At page 5 of the 2/25/2003 Office Action, the Examiner asserted that Sperry '848 discloses that the valving rod is adapted to direct cleaning solvent against the interior surface of the discharge port when the valving rod is in the closed position. In response, Appellants pointed out to the Examiner that the Sperry '848 dispenser does not direct solvent "radially outwards ... and against" the interior surface of the discharge port (opening 153) as claimed. Instead, as noted above, Sperry '848 teaches that solvent contacts opening 153 by flowing downwards out of the chemical injection ports 234 and 236 (col. 37, lines 26-45). This is far different, and far less effective, than precisely directing the solvent radially outwards and directly against the surface where the solvent is needed most, i.e., the interior surface of the discharge port, as now claimed.

In part 9 of the 7/25/2003 Office Action, the Examiner responded to the foregoing by pointing out that

> Sperry '848, column 37, lines 11-15 recited "Solvent 310 ... where upon it flows radially out through ports 234 and 236...".

In their Request for Reconsideration mailed 12/23/2003, Appellants acknowledged that Sperry '848 does indeed disclose the foregoing passage, but pointed out that claims 1 and 10 do not merely specify that the outlet ports direct solvent radially outwards. Rather, those claims further specify that the solvent is directed radially against the interior surface of the discharge port when the valving rod is in the closed position. In contrast, the Sperry '848 dispenser does not direct solvent radially outwards against the interior surface of the 'discharge port' (i.e., opening 153). Instead, when the Sperry '848 mixing chamber defining member 218 is in the non-dispensing position, chemical injection ports 234 and 236 are positioned above the corresponding chemical internal passageways 176 and 178, and are therefore also positioned well above the opening/discharge port 153 at the discharge end of main body 148 (as shown in FIG. 28 and described at col. 31, lines 25-27). Solvent thus contacts the opening/discharge port 153 by flowing downwards out of the chemical injection ports 234 and 236 (col. 37, lines 26-45). Again, this is far different, and far less effective, than precisely directing the solvent radially outwards and directly against the surface where the solvent has been found to be needed most, i.e., against the interior surface of the discharge port, as recited in claims 1 and 10.

In the final Office Action dated 2/13/2004, the Examiner responded to the foregoing by arguing that

> it has been held that the recitation that an element is "capable of" (as recited in claim 1, line 19 and in claim 10, line 26) performing a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

(Part 8 of 2/13/2004 Office Action, emphasis in original.)

In response, Appellants note that, although the phrase "capable of" appeared in the claims at issue in *In re Hutchison,* the court did not hold that such phrase was not a limitation in a patentable sense as alleged in the Office Action. In fact, the court did not criticize or even substantively comment on the use of such phrase at all.

The main thrust of the holding in *In re Hutchison* was that each of the claims "contain[ed] functional statements which may not be regarded as limiting the claims, they being article claims." *In re Hutchison,* 69 USPQ 138, 141 (CCPA 1946). However, this case was decided in 1946, prior to the 1952 Patent Act. It is now well established that functional language is perfectly acceptable in claims, including article claims. For example, MPEP §2173.05(g) provides that "[f]unctional language does not, in and of itself, render a claim improper." In fact, §2173.05(g) of the MPEP specifically indicates that the negative form of "capable of" is "perfectly acceptable [claim language] because it set[s] definite boundaries on the patent protection sought." Indeed, since 1976, nearly 195,000 U.S. patents have issued with the phrase "capable of" in their claims.

Accordingly, *In re Hutchison* is clearly irrelevant in view of current patent jurisprudence, which plainly indicates that Applicant's claim phrase, "said outlet ports being capable of directing cleaning solvent radially outwards from said bore and against said interior surface of said discharge port...", is appropriate functional language that carries as much patentable weight as the other elements of Applicant's claims. Moreover, such language is entirely appropriate in the context of the present claims because solvent will only flow radially outwards from the outlet ports when caused to do so, i.e., when the dispenser is employed in an operative application and solvent is caused to flow therethrough while the dispenser

is in the "closed position" as explained in the application. In other instances, solvent will not be caused to flow radially outwards from the outlet ports, but the dispenser will nevertheless be "capable of" providing such radial outflow when desired because of the structural features of the dispenser as described in the claims.

Accordingly, claim 1, including claims 2, 4-9 that depend therefrom, is submitted to be patentably distinct from, i.e., both novel and non-obvious over, Sperry '848. Reversal of the rejection, therefore, is respectfully requested.

II. Claims 10, 11 and 13-19

Claims 10, 11 and 13-19 stand rejected under 35 USC §103(a) as being unpatentable over Sperry '847 in view of Sperry '848.

Sperry '847 is said to disclose the invention of claims 10 et seq., except for the dispenser, while Sperry '848 is said to disclose the claimed dispenser.

As noted above, claim 10 has been amended to specify that the outlet ports of the dispenser valving rod direct cleaning solvent "radially outwards ... and against said interior surface of said discharge port when said valving rod is in said closed position...." As discussed at length above, such a feature is neither taught nor suggested in Sperry '848.[1] Accordingly, claim 10 and the claims that depend therefrom are patentable over the combination of Sperry '847 and Sperry '848 because such combination does not teach or suggest all of the elements of claim 10, namely, a dispenser that having a valving rod capable of directing cleaning solvent "radially outwards ... and against said interior surface of said discharge port when said valving rod is in said closed position...."

[1] As acknowledged in the Office Actions, such a feature is also absent from Sperry '847.

The rejection of such claims, therefore, is improper and should be reversed.

III. Claim 20

Claim 20 stands rejected under 35 USC §103(a) as being unpatentable over Sperry '847 in view of Sperry '848.

Claim 20 is an independent claim, and recites a dispenser having "an internal reservoir in which cleaning solvent may be contained" and "a conduit providing fluid communication between said internal reservoir and said discharge port to deliver cleaning solvent to said discharge port, said conduit positioned externally of said internal chamber" of the dispenser.

Sperry '847 does not disclose an internal reservoir from which cleaning solvent is delivered to the discharge port. Instead, Sperry '847 teaches that solvent is delivered to the sintered tip/discharge port by a submersible pump 40 via tube 45, with the pump being submerged in an external supply of solvent. Col. 4, lines 4-18; also FIG. 5.

While Sperry '848 discloses an initial solvent supply area 312, solvent from this area is delivered internally within the dispenser and not via a conduit positioned externally of the dispenser as recited in claim 20.

Accordingly, neither Sperry '847 nor Sperry '848 teaches or suggests the dispenser recited in claim 20 because neither reference, taken alone or in combination, discloses a dispenser having

- an internal reservoir in which cleaning solvent may be contained, and
- a conduit providing fluid communication between the internal reservoir and the discharge port, wherein the conduit is positioned

externally of the dispenser (i.e., of the internal chamber within the dispenser).

Response to Examiner's Arguments

In the Office Action dated 7/25/2003, the Examiner clarified that

> Sperry '847 was not relied upon for the internal reservoir. Instead, Sperry '848 was relied upon for the fluid dispenser as recited in claims 10-15 and 17-20 including the internal reservoir (refer back to paragraphs 4 & 7).

In response, Appellants provided a detailed comparison of the dispenser described in claim 20 with that which is disclosed in Sperry '848. Appellants first noted that claim 20 describes a dispenser having a "conduit providing fluid communication between said internal reservoir and said discharge port to deliver cleaning solvent to said discharge port, said conduit positioned externally of said internal chamber." (See, e.g., FIGS. 22 and 23 of Appellants' disclosure.) In contrast, the dispenser disclosed in Sperry '848 has no such external conduit. As shown in FIG. 28 and described at col. 36, lines 56-62 and col. 37, lines 10-49, Sperry '848 discloses an initial solvent supply area 312. However, solvent from this area is delivered internally within the dispenser and not via a conduit positioned externally of the dispenser as recited in claim 20. Some solvent flows outward through access ports 184, 186 to the exterior of the housing, but such solvent flows down along the surface 152 of the housing and not through a conduit as claimed (col. 38, lines 48-52).

In the final Office Action dated 2/13/2004, the Examiner responded to the foregoing by arguing that

> Column 25, line 48, discloses the "solvent introduction port 166." Furthermore, there has to be an external

> conduit (although not shown) to deliver solvent from the solvent chamber [sic - container] 140 (figure 5) or solvent supply means 1106 to the dispensing assembly 1102 as shown in figure 1.

(Part 8 of 2/13/2004 Office Action at page 7.)

Appellants note, in reply, that the foregoing establishes nothing more than that Sperry '848 supplies solvent to the main body of the dispenser from an external source, i.e., either solvent container 140 (col. 24, lines 7-17; FIG. 5), canister 406 (col. 45, lines 7-28; FIG. 42), or supply means 1106 (col. 20, lines 7-15; FIG. 1). As further described at col. 36, lines 37-42, solvent is delivered from an external source to solvent port 166 in main body 148, whereupon the solvent flows into the initial supply area 312 within the dispenser. However, as explained above, the dispenser disclosed in Sperry '848 has no external conduit to deliver the solvent from the initial supply area 312 to the 'discharge port' or opening 153 as claimed. Instead, as shown in FIG. 28 and described at col. 36, lines 56-62 and col. 37, lines 10-49, Sperry '848 teaches that solvent travels internally, i.e., within the dispenser, from initial solvent supply area 312 and in a downwards direction before eventually flowing out of the dispenser at opening 153.

Thus, while Sperry '848 teaches an initial supply area 312 for the solvent, the solvent from this area is delivered internally, i.e., within the dispenser, to the opening/discharge port 153, but not via a conduit positioned externally of the dispenser as recited in claim 20.

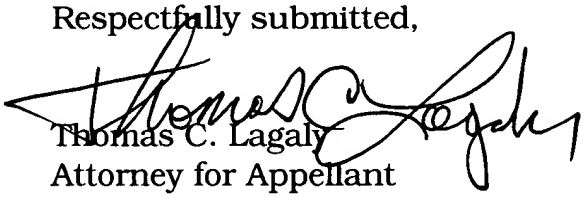
Accordingly, claim 20 is patentable over the combination of Sperry '847 and Sperry '848 because such combination does not teach or suggest all of the elements of claim 20. The rejection of claim 20, therefore, is erroneous and should be reversed.

Conclusion

Appellant respectfully submits that, for all of the foregoing reasons, claims 1, 2, 4-11, and 13-20 are patentable over the art of record. The rejection of those claims should therefore be reversed and the claims should be allowed.

The undersigned may be reached at (864) 433-2333.

Respectfully submitted,



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AUG. 30, 2004
Date

Appendix

1. A fluid dispenser, comprising:

a. a housing having an internal chamber, said housing comprising:

(1) an inlet for receiving a fluid product into said housing and being in fluid communication with said internal chamber, and

(2) a discharge port through which fluid product may exit said housing, said discharge port having an interior surface and being in fluid communication with said internal chamber; and

b. a valving rod disposed in said housing and being movable within said internal chamber between an open position, in which fluid product may flow through said internal chamber and exit said housing via said discharge port, and a closed position, in which fluid product is substantially prevented from flowing through said internal chamber, said valving rod comprising:

(1) a central bore,

(2) at least one inlet for receiving a cleaning solvent, said inlet being in fluid communication with said bore, and

(3) one or more outlet ports in fluid communication with said bore, said outlet ports being capable of directing cleaning solvent radially outwards from said bore and against said interior surface of said discharge port when said valving rod is in said closed position to facilitate the removal of at least a portion of any fluid product or derivatives thereof that may be in adherence with said interior surface of said discharge port.

2. The fluid dispenser of claim 1, wherein
said housing has a longitudinal axis;

said bore of said valving rod is substantially aligned with said longitudinal axis; and

said valving rod translates between said open and closed positions along said longitudinal axis.

4. The fluid dispenser of claim 1, wherein said housing further comprises an internal reservoir in which cleaning solvent may be contained, said internal reservoir being in fluid communication with said at least one inlet into said central bore of said valving rod.

5. The fluid dispenser of claim 4, wherein at least a portion of said valving rod is movable through said internal reservoir.

6. The fluid dispenser of claim 4, wherein said housing has at least one inlet in fluid communication with said internal reservoir so that cleaning solvent from an external source may be added to said reservoir as needed.

7. The fluid dispenser of claim 6, further including a mechanism to apply a pressure ranging from about 2 to about 12 psi to said internal reservoir.

8. The fluid dispenser of claim 1, wherein said dispenser is adapted to dispense a fluid product selected from polyols, isocyanates, and mixtures of polyols and isocyanates.

9. The fluid dispenser of claim 4, wherein said cleaning solvent is selected from glycols, ethers, and mixtures of glycols and ethers.

10. An apparatus for dispensing fluid into flexible containers and enclosing the fluid within the containers, comprising:

a. a mechanism that conveys a web of film along a predetermined path of travel, said film web comprising two juxtaposed plies of plastic film that define a partially-formed flexible container;

b. a dispenser through which a fluid product may flow in predetermined amounts, said dispenser positioned adjacent the travel path of the film web such that said dispenser can dispense fluid product into the partially-formed flexible container, said dispenser comprising:

(1) a housing having an internal chamber, said housing comprising:

(a) an inlet for receiving a fluid product into said housing and being in fluid communication with said internal chamber, and

(b) a discharge port through which fluid product may exit said housing, said discharge port having an interior surface and being in fluid communication with said internal chamber; and

(2) a valving rod disposed in said housing and being movable within said internal chamber between an open position, in which fluid product may flow through said internal chamber and exit said housing via said discharge port, and a closed position, in which fluid product is substantially prevented from flowing through said internal chamber, said valving rod comprising

(a) a central bore,

(b) at least one inlet for receiving a cleaning solvent, said inlet being in fluid communication with said bore, and

(c) one or more outlet ports in fluid communication with said bore, said outlet ports being capable of directing cleaning solvent radially outwards from said bore and against said interior

surface of said discharge port when said valving rod is in said closed position to facilitate the removal of at least a portion of any fluid product or derivatives thereof that may be in adherence with said interior surface of said discharge port;

and

c. one or more devices for sealing the plies of plastic film together to complete the partially-formed container, thereby enclosing the fluid product therein.

11. The apparatus of claim 10, wherein

said dispenser housing has a longitudinal axis;

said bore of said valving rod is substantially aligned with said longitudinal axis; and

said valving rod translates between said open and closed positions along said longitudinal axis.

13. The apparatus of claim 10, wherein said dispenser housing further comprises an internal reservoir in which cleaning solvent may be contained, said internal reservoir being in fluid communication with said at least one inlet into said central bore of said valving rod.

14. The apparatus of claim 13, wherein at least a portion of said valving rod is movable through said internal reservoir.

15. The apparatus of claim 13, wherein said housing has at least one inlet in fluid communication with said internal reservoir so that cleaning solvent from an external source may be added to said reservoir as needed.

16. The apparatus of claim 15, further including a mechanism to apply a pressure ranging from about 2 to about 12 psi to said internal reservoir.

17. The apparatus of claim 10, wherein said dispenser is adapted to dispense a fluid product selected from polyols, isocyanates, and mixtures of polyols and isocyanates.

18. The apparatus of claim 10, wherein:

said housing inlet in fluid communication with said internal chamber comprises a first inlet in fluid communication with a first fluid product comprising one or more polyols;

said housing comprises a second inlet in fluid communication with said internal chamber and with a second fluid product comprising one or more isocyanates; and

when said valving rod is in said open position, the polyols and isocyanates are mixed in said internal chamber and dispensed into the partially-formed flexible container.

19. The apparatus of claim 13, wherein said cleaning solvent is selected from glycols, ethers, and mixtures of glycols and ethers.

20. A fluid dispenser, comprising:

a. a housing, comprising

(1) an inlet for receiving a fluid product into said housing,

(2) an internal chamber disposed within said housing and being in fluid communication with said inlet, and

(3) a discharge port through which fluid product may exit said housing, said discharge port being in fluid communication with said internal chamber, and

(4) an internal reservoir in which cleaning solvent may be contained, said reservoir being disposed within said housing and positioned adjacent said internal chamber;

b. a valving rod disposed in said housing and movable within said internal chamber and said internal reservoir between an open position, in which fluid product may flow through said internal chamber and exit said housing via said discharge port, and a closed position, in which fluid product is substantially prevented from flowing through said internal chamber; and

c. a conduit providing fluid communication between said internal reservoir and said discharge port to deliver cleaning solvent to said discharge port, said conduit positioned externally of said internal chamber.